

PCT INTERNATIONAL COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 20 December 2000 (20.12.00)	
International application No. PCT/KR00/00449	Applicant's or agent's file reference OPP000238KR
International filing date (day/month/year) 12 May 2000 (12.05.00)	Priority date (day/month/year) 13 May 1999 (13.05.99)
Applicant KOO, Ki-Duk et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 30 November 2000 (30.11.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Pascal Piriou

Telephone No.: (41-22) 338.83.38

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INTERNATIONAL SEARCH REPORT

international application No.

PCT/KR00/00449

A. CLASSIFICATION OF SUBJECT MATTER		
IPC7 H01Q 1/27		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC7 H01Q 1/36, H01Q 11/08, H01Q 13/24		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Korean Patents and Applications for Inventions since 1975		
Korean Utility Models and Applications for Utility Models since 1975		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9830799 A (NIPPON ANTENNA Co.) 16 July 1998 See the whole document	1 - 27
A	KR 00-018972 A (ACE TECHNOLOGY Co.) 06 April 2000 See Abstract	1 - 27
A	EP 917241 A (NEC Corp.) 19 May 1999 See the whole document	1 - 27
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 01 SEPTEMBER 2000 (01.09.2000)		Date of mailing of the international search report 04 SEPTEMBER 2000 (04.09.2000)
Name and mailing address of the ISA/KR Korean Industrial Property Office Government Complex-Taejon, Dunsan-dong, So-ku, Taejon Metropolitan City 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer PARK, Chong Han Telephone No. 82-42-481-5713



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR00/00449

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9830799 A	16. 07. 1998	KR 99-014739 A JP 9270627 A US 5914697 A	25. 02. 1999 14. 10. 1997 22. 06. 1999
KR 00-018972 A	06. 04. 2000	--	--
EP 917241 A	19. 05. 1999	AU 9137398 A	27. 05. 1999

PATENT COOPERATION TREATY

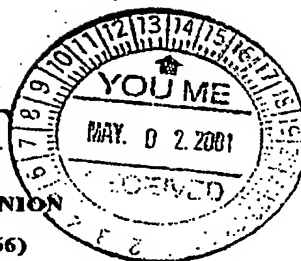
From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
KIM, Won Ho

7th Fl., Teheran Bldg., 825-33 Yoksam-dong, Kangnam-ku,
Seoul 135-080, Republic of KOREA

PCT

WRITTEN OPINION
(PCT Rule 66)



Date of mailing
(day/month/year) 27 APRIL 2001 (27.04.2001)

Applicant's or agent's file reference
OPP000238KR

REPLY DUE within 2 months from
the above date of mailing

International application No.
PCT/KR00/00449

International filing date (day/month/year)
12 MAY 2000 (12.05.2000)

Priority date(day/month/year)
13 MAY 1999 (13.05.1999)

International Patent Classification (IPC) or both national classification and IPC

IPC7 H01Q 1/27

Applicant

K-CERA INC. et al

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☐ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When ? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d)

How ? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3
For the form and the language of the amendments, see Rules 66.8 and 66.9

Also For an additional opportunity to submit amendments, see Rule 66.4
For an examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: **03 SEPTEMBER 2001 (03.09.2001)**

Name and mailing address of the IPEA/KR
Korean Intellectual Property Office
Government Complex-Taejon, Dunsan-dong, So-ku, Taejon
Metropolitan City 302-701, Republic of Korea
Facsimile No. 82-42-472-7140

Authorized officer

PARK, Chong Han

Telephone No. 82-42-481-5713



WRITTEN OPINION

International application No.

PCT/KR00/00449

I. Basis of the opinion

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
the description:
☐ pages _____, as originally
filed _____
pages _____, filed with the
demand _____
☐ the claims:
pages _____, as originally
filed _____
pages _____, as amended (together with any statement) under Article
19 _____
☐ the drawings:
pages _____, as originally
filed _____
pages _____, filed with the
demand _____
☐ the sequence listing part of the description:
pages _____, as originally
filed _____
pages _____, filed with the
demand _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which

the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
☐ filed together with the international
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheet/fig _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.

PCT/KR00/00449

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

본원 청구범위 제8-12 및 16-27항들은 아래와 같은 이유로 보호받고자 하는 대상이 명확히 정의되어 있지 않다는 점에서 조약 제6조의 규정에서 정한 요건을 충족시키지 못하였습니다.

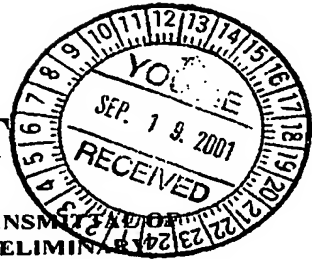
[아래]

1. 본원의 상세한 설명 및 도면에 의하면 본원은 컨드롤러의 제어에 따라 코아와 플러가 접촉되면서 서로 반대 방향으로 회전하며 플러가 회전함에 따라 페이스트 박스에 수용되어 있는 페이스트가 플러의 표면을 따라 이동하여 코아의 표면에 인쇄되어 헬리컬 라인을 형성하는 것에 주된 기술적 특징이 있으나, 본원 청구범위 제8-12 및 16-27항들은 이러한 기술적 특징을 명료하게 기재하고 있지 않습니다. 끝.

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT



NOTIFICATION OF TRANSMISSION OF
INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

To:
KIM, Won Ho

7th Fl., Teheran Bldg., 825-33 Yoksam-dong, Kangnam-ku,
Seoul 135-080, Republic of KOREA

Date of mailing
(day/month/year) 06 SEPTEMBER 2001 (06.09.2001)

Applicant's or agent's file reference

OPP000238KR (가정원 / 가정원)

IMPORTANT NOTIFICATION

International application No.

PCT/KR00/00449

International filing date (day/month/year)

12 MAY 2000 (12.05.2000)

Priority date (day/months/year)

13 MAY 1999 (13.05.1999)

Applicant

K-CERA INC. et al

1. The applicant is hereby notified that International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details in the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/KR

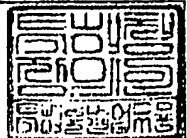
Korean Intellectual Property Office
Government Complex-Daejeon, Dunsan-dong, Seo-gu,
Daejeon Metropolitan City 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

COMMISSIONER

Telephone No. 82-42-481-5210



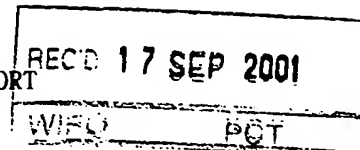
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PATENT COOPERATION TREATY

PCT

13

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference OPP000238KR	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR00/00449	International filing date (day/month/year) 12 MAY 2000 (12.05.2000)	Priority date (day/month/year) 13 MAY 1999 (13.05.1999)
International Patent Classification (IPC) or national classification and IPC IPC7 H01Q 1/27		
Applicant K-CERA INC. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 30 NOVEMBER 2000 (30.11.2000)	Date of completion of this report 04 SEPTEMBER 2001 (04.09.2001)
Name and mailing address of the IPEA/KR Korean Intellectual Property Office Government Complex-Daejeon, Dunsan-dong, Seo-gu, Daejeon Metropolitan City 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer PARK, Chong Han Telephone No. 82-42-481-5713



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/00449

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheet _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed," and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/00449

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 8-12, 16-27

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 8-12, 16-27
are so unclear that no meaningful opinion could be formed (*specify*):

Claims 8-12 and 16-27 are so unclear that no opinion could be formulated as to novelty or inventive steps.

According to the description and the drawings, a roller driver rotating the first roller, a core driver rotating the core and a controller controlling the roller driver and the core driver are essential in the composition of the present invention.

However claims 8-12 and 16-27 lack these and are not supported from the description.

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/00449

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7, 13-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-7, 13-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7, 13-15	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Claims 1-7 and 13-15 meet the criteria set out in PCT Article 33(2)-(3) because the prior art does not teach or fairly suggest the use of a roller driver, a core driver and a controller controlling the roller driver and the core driver for automatically manufacturing helical antennas.

Claims 1-7 and 13-15 meet the criteria set out in PCT Article 33(4) because it is directed to an apparatus and method for automatically manufacturing helical antennas.

INTERNATIOAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR00/00449

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

According to the description and the drawings, the present invention relates to an apparatus and method for automatically manufacturing helical antennas.

In one aspect of the present invention, a helical antenna manufacturing apparatus comprises a core made of insulative material; a first roller printing a conductive and viscous paste on a surface of the core to form a helical line; a roller driver rotating the first roller; a core driver rotating the core and moving the same in a longitudinal direction; and a controller controlling the roller driver and the core driver to control an rpm of the core, a longitudinal moving speed of the core, and the rpm of the roller, the longitudinal moving speed being set according to working frequency bands of the antenna. In another aspect of the present invention, a helical antenna manufacturing apparatus comprises a core made of insulative material; a roller printing a conductive and viscous paste on a surface of the core to form a helical line unit comprising a first helical line of a first frequency band and a second helical line of a second frequency band; a roller driver rotating the roller; a core driver rotating the core; and moving the same in a longitudinal direction of the core; and a controller controlling the roller driver and the core driver to control an rpm of the core and an rpm of the roller, and sequentially controlling the core driver according to a first moving speed which is set according to the first frequency band at which the antenna is operated and according to a second moving speed which is set according to the second frequency band.

A roller driver rotating the first roller, a core driver rotating the core and a controller controlling the roller driver and the core driver are essential in the composition of the present invention.

However claims 8-12 and 16-27 lack these and does not meet the requirements of Article 6 PCT in that matter for which protection is sought is not clearly defined.